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IS 13294 (1992): Non-buffable floor polish, liquid [CHD 23: Lac, Lac Products and Polishes]

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Indian Standard

NON-BUFFABLE FLOOR POLISH, LIQUID — SPECIFICATION

UDC 648'58-404

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

February 1992 **Price Group 2**

Polishes Sectional Committee, CHD 023

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Polishes Sectional Committee had been approved by the Chemical Division Council.

Non-buffable floor polishes are used to protect vinyl, mosaic, terrazzo and smooth cement floor surfaces. Regular application of such polishes removes ingrained dirt and grease, gives a shining look, strengthen hygienic aspects and guards floor surfaces against damage by scratches under normal condition of use.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

NON-BUFFABLE FLOOR POLISH, LIQUID — SPECIFICATION

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for non-buffable floor polish, liquid, for polishing floor surfaces, namely, vinyl, mosaic, terrazzo and smooth cement surfaces.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
4905 : 1968	Methods for random sampling
8171 : 1984	Glossary of terms relating to polishes and related materials (*first revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 8171 : 1984 and the following shall apply.

3.1 Ambient Temperature

It is the temperature between 21 and 38°C.

3.2 Weight Per Millilitre

The weight per millilitre of a liquid is the weight in g of 1 ml of a liquid when weighed in air at 30 ± 2°C.

4 REQUIREMENTS

4.1 Description

4.1.1 *Composition*

The non-buffable floor polish, liquid, shall consist mainly of resins, suitable solvents, plasticizers and waxes. It can be solvent based or water based with or without emulsifier.

4.1.2 *Odour*

The material shall have a characteristic polymeric odour, free from malodour.

4.1.3 *Colour*

The material shall be water-white or milky emulsion, and on drying, it shall not impart any colour to the floor onto which it is applied.

4.1.4 *Consistency and Stability*

The material shall be liquid in consistency, free from gritty particles, and shall pass the sieve test as prescribed in Annex A. A gentle shaking shall reconstitute the polish. It shall flow at ordinary temperature.

4.1.5 *Polishing Properties*

When applied, either neat or diluted with water by means of a clean lint free cloth, the material shall spread easily and evenly and shall give a gloss on drying at ambient temperature when compared against unpolished surface.

4.1.6 *Applicability*

The film of polish after spreading shall not show any tendency to crawl and leave circular voids or streaky finish on the floor.

4.1.7 The film of polish after spreading shall dry in a reasonable time and shall be ready for use within 60 minutes of completion of application.

4.1.8 The polished surface of the floor shall be suitable for comfortable walking.

4.1.9 The polished surface of the floor shall be reasonably resistant to water, wear and black heel marking when tested by the procedures given in Annex B and Annex C.

4.1.10 The polished surface shall not show any crack or shed white powder during its life time.

4.2 The polish shall also comply with the requirements given in Table 1.

Table 1 Requirements for Non-Buffable Floor Polish, Liquid

Sl No.	Characteristic	Requirement	Method of Test (Ref to Annex D)
i)	Non-volatile matter content, percent by mass, *Min*	10	D-1
ii)	*p*H, *Min*	9	D-2
iii)	Weight per ml (30°C), *Min*	1 015 g	D-3
iv)	Freeze-thaw stability, *Min*	3 cycles	D-4

4.3 Keeping Quality

The non-buffable floor polish liquid shall not deteriorate in any manner inside the container and shall comply with the requirements of the specification for two years from the date of manufacture when stored in its original sealed container under cover at ambient temperature.

5 PACKING AND MARKING

5.1 Packing

5.1.1 The polish shall be supplied in suitable clean metal/plastic containers or as agreed to between the purchaser and the supplier.

5.1.2 The containers shall be packed in lots in suitable cardboard boxes or as agreed to between the purchaser and the supplier.

5.1.3 The polish shall be supplied in containers of capacity 200 ml, 500 ml and 1 litre or as agreed to between the purchaser and the supplier.

5.2 Marking

5.2.1 The containers shall be marked with the following information:

a) Indication of the source of manufacture;
b) Net volume of the polish;
c) Month and year of manufacture;
d) Batch No.;
e) Name of the floor surface for which the polish is recommended;
f) Instructions for use; and
g) Safety precautions, if any.

NOTE — Any other marking required under Weights and Measures (Packaged Commodities) Regulation, 1977 may also be complied with.

6 TEST FLOOR MATERIALS

6.1 The procedure for preparation of the flooring material for application tests is prescribed in Annex E.

7 SAMPLING

7.1 The method of drawing representative samples of the non-buffable floor polish, liquid, shall be as prescribed in Annex F.

ANNEX A

(*Clause* 4.1.4)

TEST FOR PARTICLE SIZE

A-1 PROCEDURE

Weigh accurately about 50 g of the thoroughly shaken polish in a 250-ml beaker and mix with 100 ml of distilled water. Transfer the contents of the beaker to a 75 micron IS Sieve using a wash bottle containing distilled water. Wash gently with distilled water until the washing liquid after passing through the sieve contains no solid particles. Examine the sieve. There shall be no residue left on the sieve.

ANNEX B

(*Clause* 4.1.9)

DETERMINATION OF WATER RESISTANCE

B-1 PROCEDURE

Apply 2 millilitres of polish on a black vinyl tile. Allow the polish to dry for 60 minutes. Repeat application for two times. Using a wax pencil divide the polished surface into two halves To one half deposit 6 drops of water and allow to stand for 30 minutes. Blot the water using a tissue and examine visually. There shall be no water spotting marks or any discoloration when viewed against the other half which was not spotted with water.

ANNEX C

(*Clause* 4.1.9)

WEAR AND BLACK HEEL MARK RESISTANCE

C-1 PROCEDURE

This test is performed on cream or light grey coloured test tiles. Use a floor which permits easy replacement of four tiles. Take four test tiles and plach two tiles on the floor without applying polish. Apply to each of the remaining two titles, 2 millilitres of polish and allow them to dry for 60 minutes. Repeat the application of polish identically for two times. Place two polished tiles on the floor side by side of the unpolished ones and expose the floor to normal human traffic for 2 days. Gently mop the test area using water and rag and visually examine. The polished tiles shall retain gloss and relatively look cleaner than the unpolished tiles.

ANNEX D

(*Table* 1)

METHODS OF TEST FOR NON-BUFFABLE FLOOR POLISH

D-1 DETERMINATION OF NON-VOLATILE MATTER CONTENT

D-1.1 Procedure

Weigh accurately about 10 g of the polish in a tared flat-bottomed dish of approximately 10 cm diameter provided with a cover. Heat without the cover on a steam-bath till the bulk of the volatile matter is volatilized off and then transfer the dish to an air-oven kept at 105 ± 2°C. Maintain this temperature for 4 hours. Cool and weigh. Repeat heating and cooling till constant mass is obtained.

D-1.2 Calculation

$$\text{Non-volatile matter, percent by mass} = \frac{100\,B}{A}$$

where

B = mass in g of the non-volatile residue, and

A = mass in g of the sample taken for the test.

NOTE — If the polish gives too much frothing on heating in a water-bath, add 2 ml of dilute hydrochloric acid (10 percent, w/v). To obtain the correct value for non-volatile matter residue, subtract 0·1 g from the mass of the residue obtained.

D-2 DETERMINATION OF *p*H OF THE POLISH

D-2.1 Procedure

Determine the *p*H of the sample using a *p*H meter with a glass electrode.

D-3 DETERMINATION OF WEIGHT PER MILLILITRE

D-3.1 Procedure

Select a thoroughly clean and dry pyknometer. Calibrate the pyknometer by filling it with freshly boiled and cooled water at 27 ± 2°C and weighing the contents. Adjust the temperature of the substance to be examined to about 27 ± 2°C and fill the pyknometer with it. Adjust the temperature of the filled pyknometer to 27 ± 2°C, remove any excess of the substance and weigh. Subtract the tare weight of the pyknometer from the filled weight of the pyknometer. Determine the weight per millilitre by dividing the weight in air, expressed in g, of the quantity of liquid which fills the pyknometer at the specified temperature, by the capacity expressed in ml of the pyknometer at the same temperature.

D-4 DETERMINATION OF FREEZE-THAW STABILITY

D-4.1 Procedure

Transfer 50 ml of polish in each of two 100 ml stoppered glass flasks. Close the stopper and place them in a freezer at approximately −10°C for 16 hours and then thaw for 6 hours at room temperature. Repeat the cycle of freezing and thawing for two more times to complete three cycles. Examine the polish from one of the flasks after each cycle for requirements as mentioned in **4.1.4**, **4.1.5** and **4.1.6**. Examine the polish in the other flask after the third cycle.

No change in consistency and polishing properties shall be noticeable after each cycle and completion of third cycle.

ANNEX E

(*Clause* 6.1)

METHOD OF PREPARATION OF TEST TILES

E-1 PROCEDURE

New vinyl tiles of black or cream/light grey colours, size 25 cm × 25 cm are to be used for test purpose. These new tiles are often coated with glossy finish. It is necessary to remove the glossy finish by using a detergent solution and waterproof silicon carbide abrasive paper (No. C-400) as follows:

Prepare a water solution of 10 percent by mass of linear alkyl benzene sulphate. Sprinkle the solution on test tile and gently rub with waterproof silicon carbide abrasive paper (No. C-400) till complete removal of gloss. Wash the test tile in running water, wipe clean and allow to dry normally. The test tile shall be smooth and free from gloss.

ANNEX F

(*Clause* 7.1)

SAMPLING OF NON-BUFFABLE FLOOR POLISH, LIQUID

F-1 SAMPLING

F-1.1 Lot

All containers of the same size and capacity containing non-buffable liquid floor polish, produced under similar conditions of manufacture shall constitute a lot. Each lot shall be tested separately for the various requirements of the specifications.

F-1.2 Scale of Sampling

The number of containers to be selected for the sample shall be as given in Table 2.

Table 2 Scale of Sampling

No. of Containers in the Lot	No. of Containers to be Selected
Up to 500	13
501 to 1 000	20
1 001 and above	32

These containers shall be selected at random from the lot as per IS 4905 : 1968.

F-1.3 Preparation of Test Samples

Shake well each of the containers selected as per Table 2. From each of these selected containers a representative portion of material shall be taken, which shall be sufficient for carrying out tests for all characteristics given in the specification.

F-1.3.1 *Composite Sample*

Out of these portions, a small but equal quantity of material shall be taken and mixed thoroughly to make a composite sample.

F-1.3.2 *Individual Sample*

The remaining portion of the material from each selected container shall constitute an individual test sample.

F-1.4 Number of Tests

Test for odour, colour, consistency and freeze-thaw stability shall be performed on individual sample. The test for all other characteristics shall be conducted on composite sample.

F-1.5 Criteria for Conformity

The lot shall be deemed to conform to the specification if all the test results according to **F-1.4** satisfy the corresponding requirements.

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